SSCOR S-SCORT 9

Model 2109

Clearing The Airway Is Our #1 Priority

Operating Instructions & Maintenance Manual

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INTERTEK ISO 13485:2003

Caution-Notice

1. SSCOR suction units are not designed or intended for use in extended procedures that require prolonged high vacuum/low airflow applications, as is the case in wound drainage or endoscopic use or in any other procedure that produces high vacuum levels within an occluded system for an extended period of time. Turn the suction unit off when it is not in use.

2. Federal law restricts this device to sale, distribution, and use by, or on the order of a physician, emergency medical technician, or other medical practitioner. For use by medical personnel trained in suctioning techniques and in the use of medical suction equipment.

3. This manual is restricted to the discussion of the use and maintenance of this device. It does not attempt to discuss professional techniques in suctioning procedures.

4. Operator should be thoroughly familiar with these operating instructions before this device is used.

5. Do not use in the presence of flammable agents or anesthetics.

6. The S-SCORT 9 produces a powerful vacuum. Do not use the S-SCORT 9 to suction neonates.

7. Before testing for vacuum over -300mmHg look for an expiration date on the canister (where applicable) and change the canister if the canister has passed the expiration date to minimize the possibility of implosion, which can occur when a canister is aged or damaged.

8. The suction pump must be reconnected to the charging source after each use and remain on charge until needed. Disconnect only for portable use. Check the condition of the battery frequently , see the battery test on page 6. SSCOR's AC-DC charger only charges the battery, it will not power the suction device. The suction device will run on vehicle power when the unit is connected directly to the vehicle battery via the DC power cord. These parts may be purchased at shop.sscor.com.

NOTE: DO NOT ATTEMPT TO CHANGE THE ELECTRICAL SYSTEM.
THIS UNIT OPERATES ON 12-14V DC ONLY

Table of Contents

Caution-Notice	Page 2
General Description	Page 3
Important Features	Pages 4-5
Operating Instructions	Pages 6-7
Troubleshooting	Page 8
Warranty	Page 9
Maintenance	Pages 9-10
General Specifications	Page 11
Replacing the Battery Pack	Page 12

General Description

The S-SCORT® 9 is a portable, 12V DC battery operated suction pump to be used by professional personnel trained in Emergency Care techniques for opening the airway by removing bodily fluids and particulate matter.

The Model 2109 is powered by sealed lead acid batteries, capable of driving the unit for 30 - 45 minutes. The batteries are recharged by direct connection to the vehicle, or by a AC/DC Dual Mode Battery Charger (included with the unit). A sealed lead acid battery is a very stable and reliable battery. Many factors can affect the life of a battery:

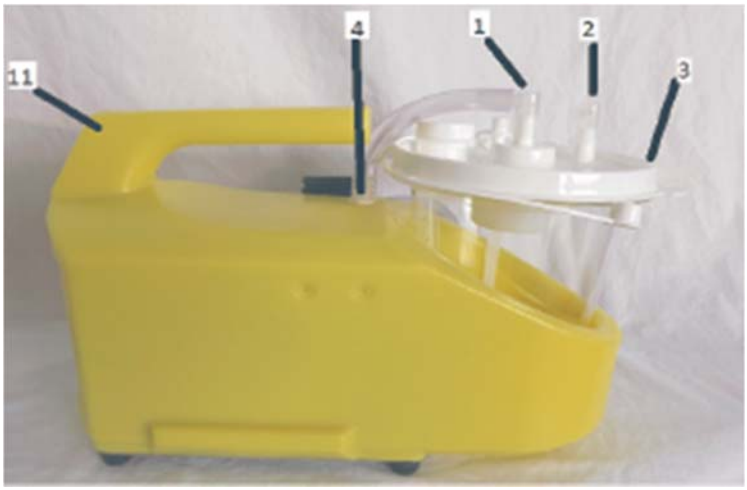
- Leaving a unit switched on after there is no longer enough power to run the pump can cause a battery to deep discharge. This can reduce the life of, or destroy the battery.
- Failing to charge a battery for an extended period of time will also cause the battery to go into deep discharge.
- Low temperatures may reduce the available capacity.
- High temperatures may cause deformation of the battery case and damage the battery.

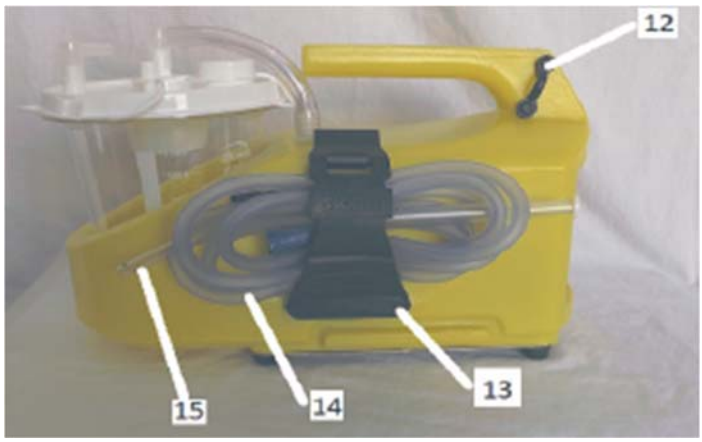
Sealed lead acid batteries can easily be maintained to permit proper operation of the equipment. To protect the battery, after each procedure turn the unit off, put the unit on charge and always store the pump at room temperature. The only way to assure the battery has functional capacity, even if it is indicated the battery is fully charged, is to perform the battery check suggested on page 6 of this operations manual. If the battery no longer has functional capacity, a new battery may be purchased at shop.sscor.com.

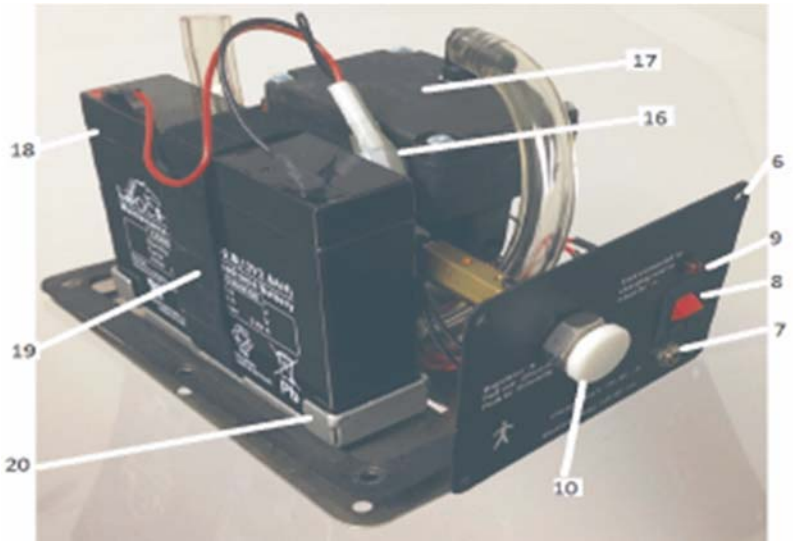
The S-SCORT 9 is designed to provide instant, effective suctioning, independent of external sources of power and can be pre-set to be activated immediately upon reaching the distressed patient, with no set up time required during the first few critical minutes of the code. Suction power is controllable for those instances when full power would be considered harmful to the patient. All controls are clearly labeled and easily accessible.

The S-SCORT 9 is equipped with a disposable collection canister which features a bacterial filter to screen airborne particulates and a mechanical shut-off valve to prevent fluid overflow.

Important Features







Important Features

Key #	Component	Function
1	Vacuum Port	Connect vacuum line to canister
2	Patient Port	Connect patient tubing to canister
3	Disposable Canister	1200cc/ml, SSCOR part #48041
4	Bulkhead Fitting	Vacuum Tube Connection
5	N/A	N/A
6	Control Panel Service Screws	To Remove Panel from Chassis
7	Charging Receptacle	12V DC, Connects Charging Source to Battery
8	On/Off Switch	Turns unit on or off
9	Charging Indicator LED	Confirms Connection to the Charging Source
10	Regulator Control	Adjusts negative pressure
11	Roto-molded Chassis	
12	Deck Straps	Holds Shoulder Strap
13	Tubing Strap	Holds Patient Tubing in place
14	Patient Connecting Tubing	9/32" ID, SSCOR part #43200
15	Vented Suction Tip	HI-D® "Big Stick"® Large Bore Suction Tip SSCOR part #44241
16	Battery Connection	Quick Disconnect
17	Pump	Provides Vacuum Source
18	Battery	Supplies Electrical Power to Pump
19	Battery Holder	Holds Battery in Place
20	Batttery Ties / Velcro Straps	Secures Battery
21	Battery Charger	Charges Battery after each use
22	12V DC Electrical Plug	Connects Charging Source to Suction device
23	DC Power Cord	Connects Suction Unit to Vehicle

Operating Instructions

For optimal performance the suction device is to remain plugged in whenever the device is not in use. If for any reason poor battery quality is suspected, a battery test should be conducted.

Battery Test

Run the following test whenever poor battery quality is suspected to ensure proper performance of the device.

1. Confirm the power cord is supplying power to the device. Check the power indicator light on the control panel.
2. Remove the power cord and run the unit from its internal DC battery.
3. Check for vacuum by occluding the patient tube and set the vacuum regulator to the maximum vacuum setting. Un-occlude the patient tubing.
4. Allow the unit to run for 15 minutes on DC power. If the unit stops or slows during the 15 minutes, it is possible the battery capacity has been depleted. It is time to replace the battery.
5. If the unit is still running at full power after 15 minutes, adjust the regulator to the desired setting, turn the device off and put the device back on charge.
6. Reconnect the unit to the charging source as soon as possible after each use

SSCOR recommends replacing the battery after 3 years. Replacement batteries may be purchased at shop.sscor.com.

BATTERY CHARGING SUGGESTIONS

It is important to keep the battery connected to the charging source at all times when the unit is not in use. In order for the S-SCORT® 9 battery to operate at its maximum efficiency, it must be charged from a power source that will bring the voltage level of the battery up to the 13V DC operating range. This S-SCORT 9 model is equipped to charge the battery two ways, with a AC/DC battery charger (21) or a DC power cord for direct connection to the vehicle (23). Both chargers may be purchased at shop.sscor.com.

An active vehicle, running calls around the clock, will do well to charge the S-SCORT 9 from the vehicle's DC charging system. The preferred method of charging the S-SCORT 9 is to wire the DC power cord to the vehicle DC power system on a properly fused line in front of the master switch. This charging method is designed to keep the battery charging at all times. If the suction unit is operated while it is hooked up to the vehicle it will utilize the vehicle power and save its own battery for emergency use. All SSCOR, Inc. suction units have a diode to prevent drawdown from the pump to the vehicle electrical system and a fuse to protect the pump from vehicle electrical surges. If your suction unit is wired to the vehicle battery via an automatic load switch power supply, be sure to use a filter in order to eliminate any voltage spikes.

A vehicle running infrequent calls does not charge itself often enough to keep batteries in the 13V DC operating range and should rely on the S-SCORT 9 AC/DC battery charger when the vehicle is connected to the shore line. In this instance the DC power cord should be used as a backup source of power to run the S-SCORT 9 from the vehicle during patient transport. To utilize the AC/DC battery charger, the suction pump must be removed from the vehicle and charged from an AC outlet or the charger must be plugged into a "shore-line" outlet in the vehicle. Whichever charging method is chosen, remember to keep the unit connected to the charging source whenever the unit is not in use.

Operating Instructions

NOTICE: Component key numbers are indicated within ( )s. Reference pages 4 and 5.

Electrical operation: Constant charging is required.

CHARGING THE S-SCORT 9 FROM A VEHICLE

Connect the DC power cord to the cigarette lighter receptacle in the vehicle or hard wire the DC power cord (23) to the hot DC electrical system of the vehicle on a properly fused line in front of the master switch. Connect the electrical line cord to the S-SCORT® 9 by securely attaching the charging plug (22) into the receptacle (7). The S-SCORT 9 battery is charged by the vehicle electrical system and the pump is powered by the vehicle current and the S-SCORT 9 battery running in parallel.

DC CHARGING FROM AC/DC DUAL MODE BATTERYCHARGER

If 115V AC charging is required, connect the S-SCORT 9 to a SSCOR AC battery charger (21) SSCOR Part #80533 (included with unit). AC charging should bring the battery to a dependable working charge in 4 to 6 hours. The green LED on the charger will light when the battery is fully charged.

The charging indicator light (9) on the front panel indicates the S-SCORT 9 is receiving electrical input from the AC charger or vehicle. It does not reflect the condition of the battery. Check the charging Indicator light to be sure you have a good electrical connection.

Operation of Unit

Negative pressure on the Model 2109 is controlled by a two position regulator (10). When fully depressed (pushed toward the pump), the negative pressure exceeds -525mmHg. To reduce negative pressure, pull the regulator straight out to the stop. In this position, the negative pressure will be -120mmHg (±15%). Attach the patient connecting tube (14) to the patient port (2) on the canister (3). Use 9/32" I.D. tubing. Turn the On/Off switch (8) to the On position and occlude the end of the patient connecting tube. Keep it occluded for 10 seconds. Release the occlusion and observe evidence of negative pressure. If the pump is running and no negative pressure is observed, check to be sure the lid on the disposable canister is tight and vacuum connections are secure. Dispose of the canister after use according to local / regional / national requirements for the disposal of hazardous waste materials.

Reconnect the S-SCORT 9 to the vehicle or to the battery charger (21) as soon as possible following the code by securely attaching charging plug (22) into the receptacle on the unit (7).

CAUTION - Always turn the pump switch “Off” as soon as possible after the procedure.

Rechargeable batteries will short out if they continue to discharge after they have reached the point where they do not have sufficient power to drive the pump. Be sure the switch is in the “Off” position until needed.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Unit does not function when switch is in the "ON" position	• Molex connections disconnected • Battery discharged • Battery damaged • Charger damaged	• Reconnect Molex connections • Recharge battery • Replace battery • Check output of charger
Unite does not suction when pump is running	• Vacuum line loose • Canister damaged • Canister lid is not tight • Thumb vent on suction tip is not occluded	• Check connections • Replace canister • Re-secure canister lid • Occlude thumb vent with thumb
Pump is sluggish	• Residual materials have collected in the pump head • Battery is unable to retain a charge • Loose connections	• Replace pump • Replace battery • Check connections
System shuts down while suctioning heavy particulate matter	• Vacuum line clogged at canister lid • Float valve has closed	• Remove connector or canister lid and loosen obstruction • Loosen float valve, empty contents, or replace canister
Regulator stem is difficult to pull	• Stem requires lubrication	• Lubricate stem with pneumatics lubricant

Warranty

SSCOR warrants that each new product is free from defects in material and workmanship under normal use and service for a period of one year from date of purchase. If returned to SSCOR, we will arrange for repairs or replacement within the terms of the warranty. The product should be decontaminated and returned properly packaged and postage prepaid. Loss or damage in transit to the factory shall be at the purchaser's risk. Please call 800-434-5211 or international +1 818-504-4054 for return authorization or for the location of an authorized repair center. Loss or damage in return shipment from SSCOR shall be at the purchaser's risk.

The warranty shall not apply to any SSCOR product which has been repaired by anyone other than an authorized SSCOR representative, or altered in any way so as, in SSCOR's judgment, to affect its safety or efficacy, nor which has been subject to misuse, negligence, or accident, nor which has had the serial number altered, effaced or removed. Neither shall this warranty apply to any SSCOR product which has been connected otherwise than in accordance with the instructions furnished by SSCOR.

This warranty is in lieu of all other warranties expressed or implied and of all other obligations or liabilities on SSCOR's part, and SSCOR neither assumes, nor authorizes any representative or other persons to assume for it, any other liability in connection with the sale of SSCOR products.

This warranty gives you specific legal rights and you may also have other rights that vary from jurisdiction to jurisdiction. For countries where minimum warranty terms are determined by statute, the warranty term is the longer of the statutory period or the term listed above.

Batteries, disposable items including collection canisters, patient tubing and catheters are excluded from this warranty.

Maintenance

Preventive Care: Observe the following maintenance routine to ensure readiness at any time:

1. When the SSCOR aspirator is not in use, keep batteries on continuous charge.
2. Test the SSCOR aspirator at regular intervals; See page 6.
3. Make sure the SSCOR aspirator is always clean and ready for use.
4. If the procedure produced an excessive quantity of fluids, check the vacuum line (1) for evidence of moisture. If the vacuum line between the pump and canister is moist, it is possible that fluids have reached the vacuum pump. See Disinfection Instructions (page 10).
5. If the vacuum pump appears defective, return the unit to the factory for repair. Do not attempt to repair the vacuum pump.
6. For technical assistance, call (800) 434-5211 or international +1 (818) 504-4054. For replacement parts and accessories, please visit shop.sscor.com.

Maintenance

As soon as possible after use, the single use disposable canister, patient tubing and catheter should be discarded according to local / regional / national requirements for the disposal of hazardous waste materials. Clean the exterior of the SSCOR suction unit using a mild detergent and clear water by dampening a clean lint free cloth. Rinse using clear water and another damp clean lint free cloth to remove any detergent residue.

NOTE: The hydrophobic filter in the canister helps to ensure that no moisture or particulate matter reaches the inside of the device. When fluids fill the canister, the positive (mechanical float) shutoff valve closes immediately, shutting the vacuum port off so as to prevent fluid from contacting the pump. The filter has been tested by the manufacturer (Bemis) to screen out aerosolized microorganisms and particulate matter at a bacterial efficiency rating of 99.99% DOP. The canister also has sidewall gradation marks starting at 100 ml/cc and at every 50 ml/cc up to 1200 ml/cc indicating the fill level of the canister.

In the unlikely event that fluids may have reached the vacuum pump, read the disinfection section. Your engineering department will have to open the unit to check the condition of the pump.

Do not reuse any single use disposable parts; do not submerge the device into any liquid, this will void the warranty and cause the device to malfunction.

Disinfection

Use personal protective equipment such as gloves, a smock, and face and eye protection when handling units that are suspected to be contaminated.

Part	Cleaning and Disinfecting
Collection Canister	Disposable item, re-use not permitted. Use new canister for each patient.
Patient Tubing	Disposable item, re-use not permitted. Use new patient tubing for each patient.
HI-D® Stick	Disposable item, re-use not permitted. Use new HI-D Stick for each patient.
Vacuum Pump	Wipe with damp cloth or disinfectant wipe. Sterilization not permitted. Vacuum pump should be replaced if contaminated
Chassis	Wipe with damp cloth or disinfectant wipe. Sterilization not permitted.

Caution: Disconnect the unit from any power source prior to cleaning the unit.

Disinfect the unit using a mild surface disinfectant, such as a 10:1 mixture of water and bleach. The unit is designed to suction contaminated fluids, which should be removed from the system immediately after use. In the unlikely event that fluids may have reached the vacuum pump, your engineering department will have to open the unit to check the condition of the pump. When cleaning the interior of the chassis, disconnect the battery from the wiring harness. The only foreseeable way fluids may reach the vacuum pump is the filter in the canister has been compromised or bypassed.

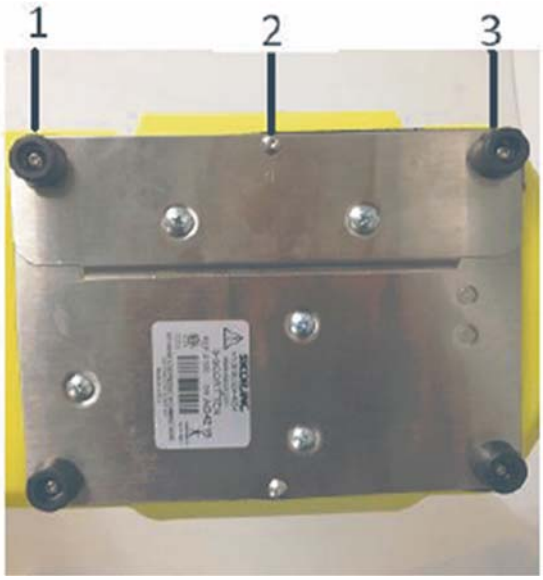
For technical assistance, call (800) 434-5211 or +1 (818) 504-4054. For replacement parts and accessories, please visit shop.sscor.com.

General Specifications

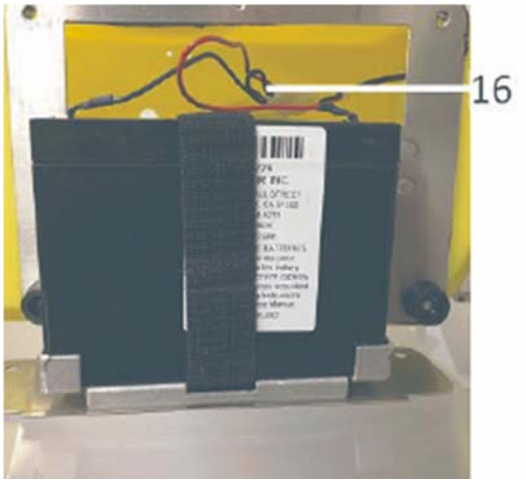
CHARACTERISTICS	SPECIFICATIONS
Size	14"L x 9.5"H x 7"W
Weight	8 pounds
Vacuum Pump	12V DC., 3.0 A Clinical Airflow ≥ 30LPM Exceeds 525mmHg
Regulator	Controls negative pressure
Power Source:	
Battery (DC Power)	Rechargeable Sealed Lead Acid. SSCOR part # 80638. Please read pages 6 and 7 for battery care suggestions. At full capacity a fully charged battery will power the suction device for 30-45 minutes.
DC Charging from Vehicle	Vehicle electrical system powers the pump and charges the battery until disconnected and then the unit switches automatically to its self contained battery.
AC Charger	U.L. Listed AC/DC Dual Mode Battery Charger
Switch	On/Off Rocker
Collection Canister	1200cc/ml SSCOR part #48041
Patient tubing	Vinyl tubing 9/32”ID x 72”L SSCOR part #43200
Suction Tip	HI-D® “Big Stick®” Large Bore Suction Tip with thumb control. SSCOR part #44241C

Replacing The Battery (Available for purchase on shop.sscor.com)

1. Remove the three screws noted below from the bottom plate. Do not remove any other screws.



2. Pull the battery plate away from the device and disconnect the battery Molex. Release the battery from the battery holder by removing the Velcro strap. Install the new battery in the battery holder, reconnect the Molex connection, and secure the battery using the Velcro strap. Turn the device on and verify negative pressure from the vacuum tubing. Re-attach the battery plate to the base plate.



Dispose of the old battery according to local / regional / national requirements for the disposal of sealed lead acid batteries.